The Actuarial Profession

making financial sense of the future

A framework for the use of discount rates in actuarial work

2011 Pensions Conference

Charles Cowling

Agenda

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Introducing the Project

Charles Cowling, Chairman	(Pensions)
Robert Hails	(Management Board)
Andrew Smith	
Ralph Frankland	(Life assurance)
James Orr	(General insurance)
Malcolm Kemp	(Investment and ERM)
Ruth Loseby	(Research Manager)
Maria Lyons	(Research Assistant)

Introducing the Project

- A survey of current practices
- A survey of existing research and debate
- Developing a common language for communicating discount rates and risk
- Developing a common framework for the future where appropriate
- Considering the impact of any changes

Developing a common framework for the future

Using the common language to:

- Develop/propose additional material for informing and influencing debate with regulators and standard setters
- Support actuaries to communicate impartially and effectively
- Consider options for reducing diversity of practice
- Consider extent to which risk might be included more explicitly and transparently in discount rates, recognising there are different purposes
  - Capital requirements
  - Accounting requirements
  - Shareholders
  - Management
- But still allowing for diversity of practice at a detailed level

Progress to date

Progress to date

- Actuaries and discount rates; a discussion
  - Chinu Patel; Chris Daykin - May 2010
- Developing a framework for the use of discount rates in actuarial work
  - Discount rate steering committee - January 2011
- Consultation
- Impact analysis
- Recommendations to Management Board

Framework and recommendations

Framework and recommendations

Discount rates developed within two alternative approaches

– “Matching” (i.e. “Market Consistent”) using discount rates consistent with current market value of assets that replicate the future economic behaviour of the liabilities

– “Budgeting” using discount rates consistent with the expected future returns on the assets held to provide for the cash flows as they fall due

Practical constraints limit extent of pure “matching”

– But, market consistency principle is well established

– Deviations from perfect matching have consequences for risk and solvency of financial firm or organisation

Addition to Actuarial Reports

Matching Framework Adequacy

- Does not imply Matching Framework Adequacy is satisfied throughout unless close matching is employed

Budgeting Framework Adequacy

- Implies nothing about Matching Framework adequacy in the future

Budgeting Framework or Volatile Matching Framework Result

- An indication of the impact of the variability should be given

Applications of the Two Approaches

"Matching"

- Transactions, avoiding arbitrage
- Adequacy of assets, knowing that these can secure liabilities in market if perfect matching can be achieved

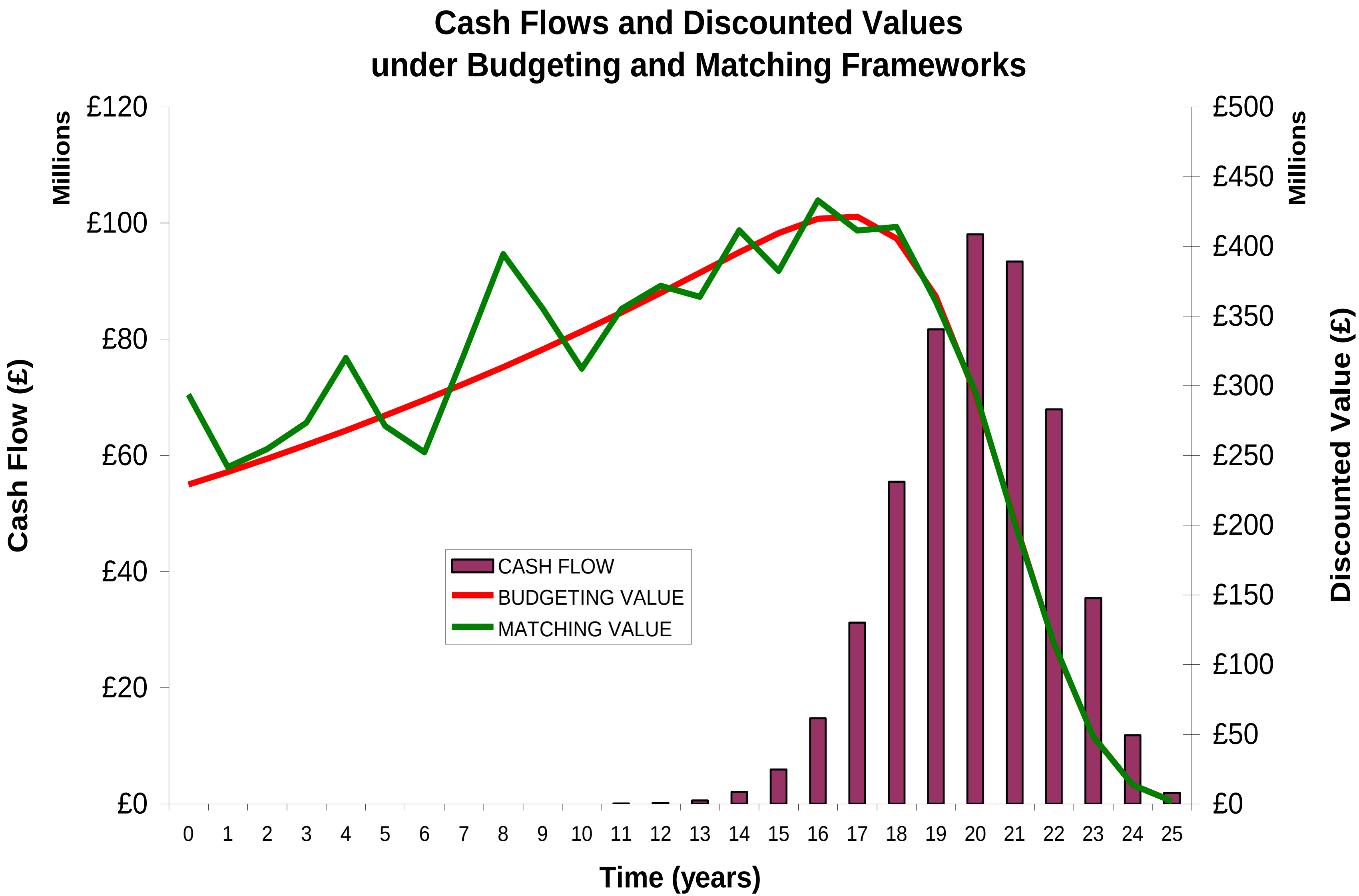
"Budgeting"

- Planning, based on assumed rates of return
- Funding, where market transactions or market comparisons are neither required nor anticipated

Cash Flow Example – Framework Comparison

- Hypothetical cash flow stream
  - mean term ~20 years
  - smooth build-up from 12 years and diminution to 25 years
- Valuing under two frameworks
  - budgeting using long-term (risk-free) average of 4%
  - matching reflects consistent but variable yield-curve
- Gap between two discounted values varies over time
  - Budgeting Value ≡ funding required under long-term assumptions
  - Matching Value ≡ “buy-out” cost

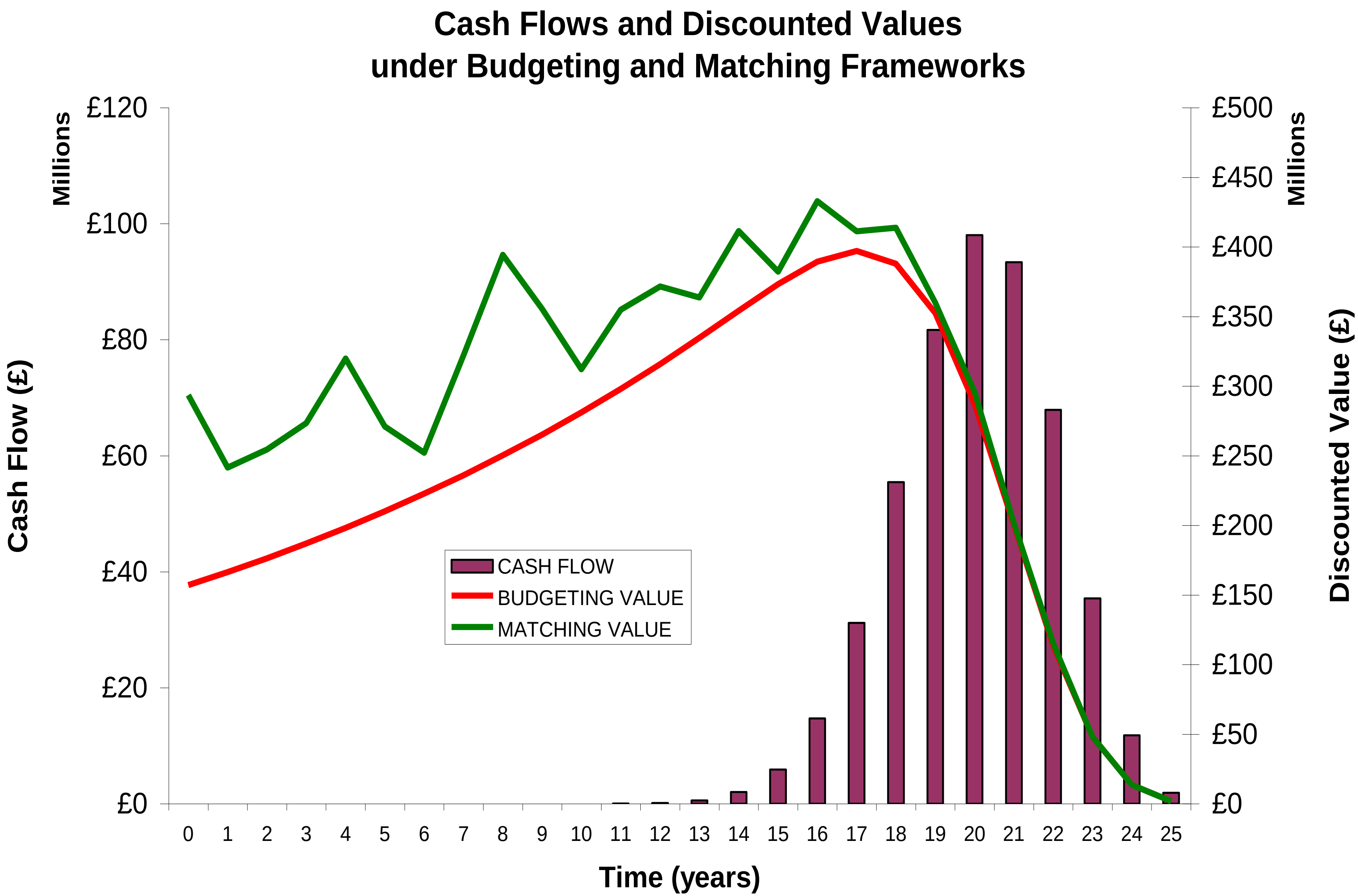
Cash Flow Example - Framework Comparison



Cash Flow Example – “Equity Premium”

- Same hypothetical cash flow stream
- Still valuing under two frameworks
  - budgeting using expected average equity return of 6%
  - matching reflects consistent but variable yield-curve
- Gap between two discounted values varies over time
  - Budgeting Value ≡ funding required under long-term assumptions
  - Matching Value ≡ “buy-out” cost
- Investing in equities will create further risk

Cash Flow Example – "Equity Premium"



Recommendations – Generic

1. **Actuaries should seek to determine discount rates (and be able to justify their choice of discount rate) within a matching framework and / or budgeting framework as described in Section 5.**

Feedback

- Broadly welcomed and supported

BAS

- TAS R C.4.6: describe the rationales for assumptions
- Pensions TAS D.2.13: explain the derivation of discount rates
- Insurance TAS D.2.9: explain the derivation of discount rates

Recommendations – Generic

2. **Where practical, any material divergence between the values placed on contractual asset or liability cash flows and their market or market consistent values should be highlighted in actuarial work, together with an explanation of the main contributors to this divergence.**

Feedback

- There was much support for this recommendation, but some concern was raised that it would not be appropriate in all circumstances

BAS

- TAS M C.5.4: indicate relationship to neutral estimates
- TAS M C.5.8: explain the limitations of any models and the implications of the limitations

Recommendations – Generic

3. **In presenting advice based on the use of discount rates actuaries should communicate clearly the framework, building blocks and level of embedded risk they have used to determine the discount rate(s). Moreover, actuaries should take great care over the terminology they use making every effort to promote understanding by users.**

Feedback

- There was general support for this recommendation, but highlighting the need for support to users of actuarial advice to aid understanding

BAS

- TAS R C.4.6: describe the rationales for assumptions.
- TAS R C.6.1: reports should be suited to the understanding of their users.
- TAS R C.6.4: provide clarification in the event of misunderstanding.
- TAS R C.6.8: explain meaning of descriptions that are not uniquely defined.
- TAS M C.5.4: indicate relationship to neutral estimates.
- Pensions TAS D.2.13: explain the derivation of discount rates.
- Insurance TAS D.2.9: explain the derivation of discount rates.

Recommendations – Pensions

4. **Actuaries and the Actuarial Profession should be clear (to their clients and to regulators) that the use of a budgeting calculation alone in the assessment of Technical Provisions will not provide adequate information on the assessment of the security of members' benefits.**

Feedback

- There was a mixed response to this recommendation. Whilst generally accepted by actuaries, it was not always accepted by non-actuaries - possibly highlighting a key area of potential confusion and misunderstanding

BAS

- TAS R C.5.1: include all material matters
- TAS R C.5.8: explain the objective of calculations
- TAS R C.6.10: explain what the results are intended to represent
- TAS M C.5.8: explain the limitations of any models and the implications of the limitations
- Pensions TAS D.2.2: assumptions should be appropriate for the purpose
- Pensions TAS D.2.7: any opinion on assumptions should include an opinion on appropriateness for purpose

Recommendations – Pensions

5. **In assessing what is a "prudent" discount rate for the purposes of calculating Technical Provisions under UK regulations, consideration should be given primarily to the current or evolving pension scheme investment strategy, it being noted that there may then need to be other explicit elements of prudence included in the liability calculation if the overall result is to be sufficiently prudent as far as the Pensions Regulator is concerned.**

Feedback

- This was seen by many as simply repeating what is required by legislation

BAS

- Pensions TAS D.2.16: explain how discount rates compare with returns expected from investment strategy

Recommendations – Pensions

6. **For the purposes of establishing a recovery plan to restore pension scheme funding up to the level of Technical Provisions a budgeting framework may be used with a realistic assessment of the expected investment return that can be anticipated during the recovery period. However, actuaries should be clear, as per Recommendation 4, that such a framework will not provide adequate information on the assessment of the security of members' benefits during and at the end of the recovery period.**

Feedback

- Response was a broad mixture of that provided to recommendations 4 and 5

BAS

- TAS R C.3.3: state the purpose of reports
- Pensions TAS D.2.2: assumptions should be appropriate for the purpose
- Pensions TAS D.2.16: explain how discount rates compare with returns expected from investment strategy

Recommendations – Pensions

7. **For the purposes of calculating an estimate of pension scheme solvency a matching framework should be used (making no adjustment for sponsor default on the pension obligation)**

Feedback

- Broadly supported

BAS

- Pensions TAS D.2.2: assumptions should be appropriate for the purpose

Recommendations – Pensions

8. **For the purposes of disclosing pension scheme funding information to members, trustees and regulators should be encouraged to focus on the solvency position and how it is expected to develop under the agreed funding plan**

Feedback

- Response was mixed, with some believing that solvency is not a fundamentally important measure

BAS

- TAS R C.5.20: indicate projected results from future calculations

Recommendations – Pensions

9. **The Actuarial Profession should call for pension liabilities in company accounts to be calculated in a matching framework (making no adjustment for sponsor default), subject to this principle being consistent with all long term financial liabilities (including insurance liabilities)**

Feedback

- The response to this recommendation was mixed, with some still seeing marked-to-market accounting as undermining UK pension provision

BAS

- Not applicable

Recommendations – Pensions

10. **Actuaries should advise on member options and transactions within a matching framework. Even where an alternative approach is indicated by other considerations (e.g. legislation or pension scheme rules) the matching framework calculations should be considered in any advice given**

Feedback

- A mixed response and little or no support for further guidance / actuarial standards

BAS

- Pensions TAS D.2.2: assumptions should be appropriate for the purpose
- Pensions TAS D.2.7: any opinion on assumptions should include an opinion on appropriateness for purpose

Recommendations – Pensions

11. **Actuaries should encourage trustees to consider cash equivalent transfer values in a matching framework and the Actuarial Profession should encourage regulators to revisit the regulations on cash equivalent transfer values from a matching framework perspective**

Feedback

- Some significant resistance to this recommendation

BAS

- Pensions TAS D.2.2: assumptions should be appropriate for the purpose
- Pensions TAS D.2.7: any opinion on assumptions should include an opinion on appropriateness for purpose

Recommendations to Management Board

Recommendations to Management Board

1. Encourage actuaries (through education and CPD) to determine discount rates (and be able to justify their choice of discount rate) within a matching framework and / or budgeting framework.

2. Where relevant to the context of the actuarial advice being given,, actuaries should be encouraged (through education and CPD) to highlight in their work any material difference between the values placed on contractual asset or liability cash flows and their corresponding market or market consistent values, and explain the main contributors to this difference.

3. Encourage actuaries (through education and CPD) when presenting advice involving the use of discount rates to communicate clearly the framework, building blocks and level of embedded risk they have used in assessing the discount rate(s).

Recommendations to Management Board

4. Encourage actuaries (through education and CPD) to highlight to their clients the limitations of a budgeting calculation in the assessment of Technical Provisions which in isolation does not provide adequate information on the assessment of the certainty of delivery of members' benefits. A more complete view needs assessment of the reliance on the scheme sponsor’s covenant

5. Encourage actuaries (through education and CPD) in assessing what is a "prudent" discount rate for the purposes of calculating Technical Provisions under UK regulations, to give primary consideration to the current or evolving pension scheme investment strategy. However, in support of the BAS requirement to explain the limitations of any models, actuaries to be encouraged (again through education and CPD) to help their clients understand what is "prudent" in the assessment of Technical Provisions by considering the extent to which the sponsor covenant is able to support the difference between a solvency assessment of the liabilities and the proposed level of Technical Provisions.

Recommendations to Management Board

6. Encourage actuaries (through education and CPD) to use a budgeting framework for advising on recovery plans for restoring pension scheme funding up to the level of Technical Provisions (as calculated under UK regulations). Further, encourage actuaries (through education and CPD) to highlight the limitations of this approach in isolation for providing adequate information on the assessment of the security of members' benefits during and at the end of the recovery period

7. Where such a comparison is required or appropriate, to encourage actuaries (through education and CPD) to calculate estimates of pension scheme solvency using a matching framework making no adjustment for sponsor default on the pension obligation

8. Encourage actuaries (through education and CPD) where it is appropriate to have a wider aspect covered by their advice - to encourage, through their advice, more understanding on the likelihood of benefit delivery in the communication of funding information to members and trustees

Recommendations to Management Board

9. The Actuarial Profession should support the use of a matching framework for reserving for long term financial liabilities in company accounts

10. Encourage actuaries (through education and CPD) in giving advice on member / policyholder options / transactions (including cash equivalent transfer values and surrender values) to help users understand the implications of their advice within a matching framework (this may need to be through supplementary information when legislation or other considerations dictate adoption of an alternative approach in practice).

Recommendations to Management Board

Possible future research:

- *Social Time Preference Rate and Government unfunded liabilities*
- *How the influence of sovereign risk or illiquidity premium might affect the derivation of a discount rate*
- *How modelling of cash flows within a stochastic framework might help address questions of risk and help in communicating advise to users of actuarial information*
- *How to apply any adjustment for sponsor default in the accounting for defined benefit pension schemes and other long term financial liabilities (considering the requirement to hold assets against liabilities)*

Produce guide on terminology used in actuarial advice on discount rates for non-actuarial users of actuarial advice.

Consider a dialogue with the FSA on money purchase illustrations

Next Steps

Next Steps

- Management Board considering next steps for the project
- Report to actuaries (and others consulted) on conclusions from project
- Production of a simple guide on the discount rate framework for non-actuaries
- Begin rolling-out implementation through MSEC, PECs and QEC

Questions or comments?